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PATENT & TRADEMARK OFFICE

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application: Anthony D. Walker

Serial No.:   08/883,710

Filed: June 27, 1997

Art Unit: 2756

Examiner: T. Vu

Title: COMMUNICATION NETWORK HAVING ADJUSTABLE
            RESPONSE TIMEOUTS AND THE METHOD THEREFOR

APPLICANT'S BRIEF IN SUPPORT OF APPEAL

Box AF
Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

> This brief is being submitted pursuant to 37 C.F.R. § 1.192. Applicant's are furnishing

herewith three (3) copies of this brief.

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I.   REAL PARTY-IN-INTEREST

The real party-in-interest is International Business Machines Corporation to which this patent application has been assigned.

II.   RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known by the Applicant, Applicant's legal representative, or assignee which will directly affect or be directly affected by or having a bearing on the Board's decision in the pending appeal.

III.   STATUS OF CLAIMS

Claims 1-19 are pending in the application.

Claims 1-19 stand rejected.

IV.   STATUS OF AMENDMENTS

No amendments have been filed subsequent to final rejection.

V.   SUMMARY OF INVENTION

The present invention provides a communication network which implements a timing system that closely approximates network response times so that information may be transmitted between two data processing systems within the network in a timely and efficient manner. (Detailed Description, page 7, lines 3-6.) During operation of the data processing systems of the present invention, a sending data processing system sends query data to a receiving data processing system. (Detailed Description, page 7, lines 6-8.) At that point, a response timer within the sending data processing system is initialized to track the query operation.   (Detailed Description, page 7, lines 8-9.) If the receiving data processing system provides a response to the sending data processing

system before the response timer expires, the timing implemented for data communications is proper for the communication network. (Detailed Description, page 7, lines 9-12.)

However, in the present invention, if the receiving data processing system fails to provide a response within a time specified by the response timer, the transmitting data processing system must resend a query frame. (Detailed Description, page 7, lines13-15.) Subsequently, if the receiving data processing system provides a response after the second query frame is sent by the transmitting data processing system, two possibilities exist for explaining this slow response time. (Detailed Description, page 7, lines 15-18.) In a first explanation, it is assumed that the communication network lost the first query of the transmitting data processing system. (Detailed Description, page 7, lines 18-20.) In this situation, the network response time may be very good, but the communication network may have simply lost the first query frame. (Detailed Description, page 7, lines 20-21.) In a second explanation, it is assumed that the network response time is slow and this lack of timeliness causes the response timer to expire. (Detailed Description, page 7, line 21 through page 8, line 2.)

The present invention addresses the second possibility by sending query frames using a current value stored within the response timer. (Detailed Description, page 8, lines 3-4.) After a query response is received, a query timer is initialized and started with a maximum response time and the response timer is stopped. (Detailed Description, page 8, lines 4-6.) Subsequently, if the query response returns within the maximum response time, this indicates that the response time set by the current implementation is too small and an adjustment should be made. (Detailed Description, page 8, lines 6-9.) This adjustment is made in timer resolution increments, up to the maximum response time. (Detailed Description, page 8, lines 9-10.)

In one embodiment of the present invention, a sending data processing system in a communication network gradually increases a response time of a response timer therein until the time measured by the response timer does not expire before a response by the receiving data processing system is received by the sending data processing system. (Detailed Description, page

8, lines 17-21.) The sending data processing system continues to operate with the increased response time until the increased response time has expired. (Detailed Description, page 8, line 21 through page 9, line 1.) Furthermore, the system will continue to operate with an increased response time until a future response timer expiration (i.e. lost message) causes a query frame to be sent. (Detailed Description, page 9, lines 1-3.) If the timers response to the query frame is significantly lower (defined in invention as greater than two times the TIMER RESOLUTION) than the current value of the response timer, the response timer value will be adjusted. (Detailed Description, page 9, lines 3-6.) Subsequently, the sending data processing system sends a query frame to determine if the receiving data processing system has provided a response more quickly. (Detailed Description, page 9, lines 8-10.) If the receiving data processing system provides a response before the response timer expires, this indicates that the response timer of the transmitting data processing system should be decreased for future transmissions. (Detailed Description, page 9, lines 10-13.)

VI.   ISSUES

     A.   Is Claim 19 properly rejected under 35 U.S.C. § 112, second paragraph since no function is specified by the words preceding "means" it is impossible to determine the equivalence of the elements, as required by 35 U.S.C. § 112, sixth paragraph?

     B.   Are Claims 1-6 properly rejected under 35 U.S.C. § 102 as being unpatentable over *Ellis*, U.S. Patent No. 5,719,882 (hereafter "*Ellis*")?

     C.   Are Claims 7-19 properly rejected under 35 U.S.C. § 103 as being unpatentable over *Ellis* in view of U.S. Patent No. 5,964,837 of *Chao, et al.* (hereinafter "*Chao*")?

VII.   GROUPING OF CLAIMS
     Claims 1, 5 and 6 form a first group.
     Claims 2 and 4 form a second group.
     Claims 7, 14, and 16 form a third group.

Claims 17, 18 and 19 form a fourth group.

These groups are to be separately considered.

Claims 3, 8, 9, 10, 11, 12, 13 and 15 are to be separately considered.

VIII. ARGUMENT

A.   The rejection of claim 19 under 35 U.S.C. § 112, second paragraph is improper.

In the Office Action having a mailing date of December 3, 1999 (Paper No. 7), the Examiner rejected claim 19 under 35 U.S.C. § 112, second paragraph on the grounds that the word "means" is preceded by the word "comprising" in an attempt to use a "means" to recite a claim element as a means for performing a specified function. (Paper No. 7, page 2.) The Examiner further asserted that "since no function is specified by the word(s) preceding 'means' it is impossible to determine the equivalence of the element, as required by 35 U.S.C. § 112, sixth paragraph." (Paper No. 7, page 2.) The Applicant in the Applicant's Amendment under 37 C.F.R. § 1.111 mailed on March 3, 2000 (hereinafter, "Applicant's Third Rule 111 Amendment") traversed the rejection of claim 19 under 35 U.S.C. § 112 second paragraph, and argued that the rejection was improper, and requested the Examiner to withdraw the rejection of claim 19 thereunder. (Applicant's Third Rule 111 Amendment, pages 2-3.) In the Office Action having a mailing date of June 6, 2000 (Paper No. 9) the Examiner did not respond to the Applicant's traversal of the rejection of claim 19 under 35 U.S.C. § 112, second paragraph, nor did the Examiner withdraw the rejection. Therefore the Applicant's assume that the rejection of claim 19 under 35 U.S.C. § 112, second paragraph stands, and therefore the Applicant responds accordingly.

The Applicant respectfully traverses this rejection of claim 19 under 35 U.S.C. § 112, second paragraph. The Applicant respectfully asserts that claim 19 comports with 35 U.S.C. § 112, second and sixth paragraphs, and the teachings of *Ex parte Klumb*. Claim 19 is a dependent claim depending from claim 17 and reciting the first data processing system thereof further comprising: means for incrementing the response timer value [recited in claim 17] by a preselected time period

in response to the first amount of time. As *Ex parte Klumb* teaches, [35 U.S.C. § 112, sixth paragraph] is explicit that a means for performing a specified function is an acceptable definition of an element (or subcombination) of a combination.... *Ex parte Klumb*, 159 U.S.P.Q. 694, 695 (B.P.A.I. 1968). *Klumb* further teaches that "the third [now sixth] paragraph of section 112 suggests the use of a prepositional phrase as a modifier of the structureless term 'means'". *Ex parte Klumb*, 159 U.S.P.Q. at 695. Thus, there is no requirement that a modifier precede, the term 'means'; indeed *Ex part Klumb* teaches that precisely the contrary is preferred. *Id.* Claim 19 is in the precise form suggested in *Ex parte Klumb* wherein the prepositional phrase "for incrementing" modifies "means". Thus, claim 19 fully comports with the teachings of *Ex parte Klumb*. Consequently, the Applicant respectfully contends that the rejection of claim 19 under 35 U.S.C. § 112, second paragraph is improper, and the Applicant respectfully requests the Examiner to withdraw the rejection of claim 19 under 35 U.S.C. § 112, second paragraph.

B.   The rejections of claims 1-6 under 35 U.S.C. § 102 as being unpatentable over *Ellis* is improper.

In order to anticipate, a single prior art reference must teach all of the claim limitations. MPEP § 2131. The limitations must be arranged as required by the claim MPEP § 2131.

In the Office Action having a mailing date of December 3, 1999 (Paper No. 7), the Examiner rejected, *inter alia*, claims 1-6 under 35 U.S.C. § 102 as being unpatentable over *Ellis*. In the Applicant's Third Rule 111 Amendment, the Applicant amended claim 1 to incorporate the limitation of claim 20, and canceled claim 20. (Applicant's Third Rule 111 Amendment, page 2.) Claim 20 had been rejected in Paper No. 7 under 35 U.S.C. § 103 as being unpatentable over *Ellis* and *Chao* in further view of U.S. Patent No. 5, 592,468 of *Sato*. (Paper No. 7, page 6.) Thus, as a rejection under 35 U.S.C. § 102 requires that a single prior art reference teach the identical invention of the claim, claim 1 is necessarily not anticipated by *Ellis* insofar as the Examiner relied on a combination of *Ellis* and *Chao* to teach the invention of claim 20. Claim 1 as amended in the

Applicant's Third Rule 111 Amendment recites the identical limitations of claim 20, now canceled. The Applicant further demonstrated with respect to claim 1, which demonstrations are repeated hereinbelow, that a *prima facie* showing of obviousness has not been made with respect to claim 1. The Examiner, in the Office Action having a mailing date of June 6, 2000 (Paper No. 9) did not respond whatsoever the Applicant's demonstrations with respect to claim 1.

With respect to claim 1, claim 1 recites a method for operating a communication system including the steps of transmitting a first information frame, selectively receiving a first response in response to transmission of the first information frame, measuring a first amount of time between transmission of the first information frame and receipt of the first response, and selectively modifying a response time value in response to the first amount of time, wherein the step of measuring a first amount of time between transmission of the first information frame and receipt of the first response uses a timer operating in response to a clock, and wherein the response time value is a response time value of the timer. The Examiner has previously asserted that *Ellis*, *Chao* and *Sato* disclose the invention of claim 1 (which recites the identical limitations of previous claim 20). In particular, the Examiner relies on the same teaching in *Chao* relied upon in rejecting claim 9, discussed hereinbelow. However, for the reasons discussed in conjunction with, *inter alia*, claim 9 the Examiner has not identified teaching in *Chao* disclosing a timer used for measuring a first amount of time between transmission of a first information frame and receipt of a first response. Neither does *Chao* disclose a timer operating in response to a clock. Thus, the Applicant respectfully contends that it has not been shown that the prior art references, either alone or in combination, teach or suggest all of the limitations of claim 1. Furthermore, as discussed below in Section B1, the Examiner provides no proper motivation for combining the prior art references to make the invention of claim 1. For the reasons discussed hereinbelow in Section B1, a *prima facie* showing of obviousness cannot be predicated on the motivation provided by the Examiner. Therefore, because a motivation sufficient to sustain a *prima facie* showing of obviousness has not been provided, and

because the prior art references do not teach or suggest all of the limitations of claim 1, the Applicant respectfully asserts that claim 1 is allowable under 35 U.S.C. § 103 over *Ellis*, *Chao* and *Sato*.

Likewise, with respect to claims 2-6, the Examiner neither repeated a rejection of claims 2-6 under 35 U.S.C. § 102 in Paper No. 9, nor did the Examiner address the Applicant's arguments with respect to claims 2-6 therein. Therefor, the Applicant assumes that the rejection under 35 U.S.C. § 102 of claims 2-6 has not been withdrawn. Accordingly, the Applicant repeats the Applicant's argument with respect to claims 2-6 as provided in the Applicant's Third Rule 111 Amendment.

Claim 2 depends from claim 1 and recites the additional limitation in which the step of selectively modifying further comprises the step of incrementing an initial response time by a timer resolution value, to form the response time value. The Examiner relies on disclosure in *Ellis* directed to incrementing a retry number (Paper No. 7, page 3, citing *Ellis* at column 6, line 34.) The step of incrementing a retry number cited by the Examiner is included in a methodology described by *Ellis* for calculating a number of retries to be made before a hub manager times the device out. (*Ellis*, column 6, lines 23-45.) Thus, the Examiner has identified no teaching, and there is no such teaching, in *Ellis* directed to incrementing an initial response time value by a timer resolution value. Thus, it has not been shown that *Ellis* teaches all of the limitations of claim 2. Additionally, claim 2 incorporates all of the limitations of claim 1, and for the aforesaid reasons, claim 1 is admittedly not anticipated by *Ellis*, in view of the aforementioned rejection of claim 20 over a combination of references. Thus, claim 2 is allowable under 35 U.S.C. § 102 over *Ellis*, and for the reasons discussed in conjunction with claim 1, over a combination of *Ellis*, *Chao* and *Sato*. Likewise claim 4, depending from claim 2 is also allowable under 35 U.S.C. §§102 and 103 over the aforesaid references.

Claim 3 is directed to the method of claim 2 in which the initial response time value is incremented up to a maximum response time value. The Examiner asserts that *Ellis* discloses the limitation of claim 3, citing *Ellis* at column 2, line 15. However, reference to the express teaching of *Ellis* shows that the teaching in *Ellis* cited by the Examiner has been extracted from teachings in

Ellis disclosing that "when the first response time [elapsed between a first network device sending a first message and the first network device receiving from a second network device the response thereto] is a maximum for response times for messages sent from the first network device to the second network device, the retry time for the second network device is set equal to an amount greater than the first response time." (*Ellis*, column 2, lines 15-19.) Thus, by their plain terms, the aforesaid teachings relied upon by the Examiner do not disclose a step of incrementing an initial response time up to a maximum response time value. Thus, it has not been shown that *Ellis* teaches all of the limitations of claim 3, arranged in the same way. Hence, the Applicant respectfully contends that claim 3 is not anticipated by *Ellis* under 35 U.S.C. § 102. Moreover, for the reasons discussed in conjunction with claim 1, the Applicant's also respectfully assert that claim 3 is allowable under 35 U.S.C. § 103 over the combination of *Ellis*, *Chao* and *Sato*.

Claims 5 and 6 are each directed to the method of claim 1, in which the response time approximates an amount of time the communication system requires to transfer the first information frame between a first data processing system and a second data processing system, and wherein the response time value is dynamically modifiable in response to the first amount of time, respectively.

Additionally, as discussed hereinabove in Subsection 1, a proper motivation for combining *Ellis* and *Chao* upon which a *prima facie* showing of obviousness can be sustained, has not been provided. Moreover, Claims 5 and 6 incorporate all of the limitations of claim 1 and are necessarily allowable under 35 U.S.C. § 103 over *Ellis* and *Chao* as well.

C.   The rejection of claims 7-19 under 35 U.S.C. § 103 as being unpatentable over *Ellis* in view of *Chao* is improper.

The Examiner has rejected of Claims 7-19 under 35 U.S.C. § 103 as being unpatentable over *Ellis* in view of *Chao*. In response, Applicant respectfully traverses this rejection.

The basic test for nonobvious subject matter is whether the differences between the subject matter and the prior art are such that the claimed subject matter as a whole would not have been

obvious to a person having ordinary skill in the art to which the subject matter pertains. The United States Supreme Court in *Graham v. John Deere & Co.*, 383 U.S. 1 (1966) set forth the factual inquiries which must be considered in applying the statutory test: (1) a determination of the scope and contents of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; and (3) resolving the level of ordinary skill in the pertinent art.

1.   Determining Scope and Content of Prior Art

In determining the scope and content of the prior art, the Examiner must first consider the nature of the problem on which the inventors were working. Once this has been established, the Examiner must select, for purposes of comparing and contrasting with the claims at issue, prior art references which are reasonably pertinent to that problem (the inventors' field of endeavor). See *Heidelberger Druckmaschinen AG v. Hantscho Commercial Products, Inc.*, 30 U.S.P.Q.2d 1377, 1379 (Fed. Cir. 1994). In selecting references, hindsight must be avoided at all costs. The Examiner must avoid using the Application as a guide through the maze of prior art references, combining the right references in the right way to achieve the result of the claim. *See Grain Processing Corp. v. American Maize-Products Co.*, 840 F.2d 502, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988).

To ensure that Examiner is not using the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention, the Examiner must show a motivation to combine the references that create the case of obviousness. MPEP § 2143.01; *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998). Three possible sources of a motivation to modify or combine references to make the claimed invention have been identified. MPEP § 2143.01 (citing *In re Rouffet*, 47 U.S.P.Q.2d at 1457-58.) A motivation to combine or modify the prior art references must come from one of three sources: the nature of the problem being solved, the prior art references themselves, or the knowledge of one of ordinary skill in the art. *Id.* Moreover, showings must be clear and particular. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). This requirement is the best defense against the powerful attraction of

hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. *Id.*

The Applicant asserts that the Examiner has not provided a proper motivation for combining *Ellis* and *Chao* as applied in rejecting Claims 7-19. *Chao* is directed to systems and methods for monitoring the topology of a network, not directed to systems and methods for response time outs in networks. In the invention of *Chao*, management of a point-to-point network by a network management station is effected via a special management application called an "agent" in each node. (*Chao*, column 4, lines 23-25.) The network topology may be ascertained by polling monitoring, however, *Chao* teaches that there is a tradeoff between frequency of polling and network bandwidth consumption by management traffic. (*See Chao*, column 6, lines 44-54.) Thus, *Chao* discloses an event approach to maintaining a map of the network topology. (*Chao*, column 6, lines 55-65.) The Examiner contends that the "skilled artisan would have looked into the timing in computer art for further details and have found the Chao teaching." (Paper No. 9, page 6.) The Examiner provides no explanation why the skilled artisan would be led to the teaching in *Chao* to supply the limitations admittedly missing in *Ellis*, but simply asserts that *Chao* teaches a "method monitoring a network and generating a topology information, using a timer to start and restart polling." (Paper No. 9, page 6, citing *Chao* in its entirety, save for the claims.) The Examiner only concludes that "it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the query time or response timer as taught by Chao et al. into the Ellis system to enhance the timing calculation the response time in the communication network." (Paper No. 9, page 6.) However, the Examiner provides no evidentiary support from one of the aforementioned sources for the Examiner's motivation to combine *Chao* and *Ellis*. Broad conclusory statements regarding the teaching of multiple references, without more, are not evidence. *In re Dembiczak*, 50 U.S.P.Q.2d at 1617; *accord In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Furthermore, almost all, if any all, inventions are motivated by a desire to have a more efficient process or apparatus, a less expensive apparatus or method, or similar subjective desire.

As discussed hereinabove, the courts require the Examiner to show some motivation to combine references to prevent the use of the Application as a template to piece together elements of the prior to defeat the patentability of the claimed invention. *In re Rouffet* at 1457. A mere recitation that a motivation to combine references is provided by a desire to have an apparatus or process with some advantage eviscerates this requirement because Examiners can invariably recite such a motivation. However, the showings supporting a motivation or suggestion to combine must be clear and particular. *In re Dembiczak*, 50 U.S.P.Q.2d at 1617; *In re Kotzab*, 55 U.S.P.Q.2d at 1317. Consequently, the Examiner has provided no motivation or suggestion upon which a *prima facie* showing of obviousness may be predicated for combining *Chao* and *Ellis*. The Examiner had previously provided essentially the same motivation for combining *Ellis* and *Chao* in the Office Action having a mailing date of December 3, 1999 (Paper No. 7). The Applicants traversed and responded in the Applicant's Third Rule 111 Amendment, however the Examiner did not address the Applicant's response in Paper No. 9. (The Applicant will discuss hereinbelow the teaching or suggestion of the respective claim elements.)

2.   Differences Between Prior Art and Claims

The second step within the test described in *Graham* determines that it is necessary to ascertain the differences between the cited prior art and the claims at issue. Some of these differences have already been discussed above in Section 1.

Claim 7 is directed to a method for operating a communication system including the steps of transmitting a first frame of information, initiating operation of a timer with a first response time, determining when a first query response has been received, and selectively incrementing the first response time when the first query response has been received. The Examiner has identified no teaching in *Ellis* directed to a query response nor has the Examiner identified teaching in *Ellis* directed to selectively incrementing the first response time when the first query response has been received. The Examiner responds that "the prior art taught the calculated formula incrementing the response time by the formula and determining when the first response has been received (Paper No.

9, page 2, citing *Ellis* FIGURE 4 and column 5 lines 64- column 6 line 60.) However, the teaching in Ellis discloses adjusting a maximum time value used as a decision threshold for a response time that is determined by the elapsed time between sending a (network management) message to a network device and receiving a response from the network device. (*Ellis*, column 5, line 64 - column 6, line 6.) The current maximum time value is used to determine how the retry time value and the maximum time value are to be adjusted. (See *Ellis*, FIGURE 4 and column 5, line 64 - column 6, line 6.) Additionally, the teaching discloses adjusting a retry time that sets the interval between retries. (*Ellis*, column 6, line 6-10.) The sending system (a hub manager) retries sending a management data packet after the retry time elapses. (*Ellis*, column 4, lines 47-50.) Thus *Ellis* does not teach or suggest the steps of transmitting a first frame of information, initiating operation of a timer with a first response time, determining when a first query response has been received, and selectively incrementing the first response time when the first query response has been received.

The Examiner also contends that the condition (increment or modifying the response time) is selectable as a design choice at a beginning of the operation or by the time the first response received by measurement and calculation. (Paper No. 9, page 6.) However, there is no such teaching or suggestion, and there is no reason to adjust the retry time of *Ellis* at the beginning of the operation, and, moreover, is contradicted by the explicit teaching in *Ellis* that the hub manager waits until a message has been sent to the network device, and a response received. (*Ellis*, column 5, lines 64-66.)

With respect to the limitation drawn to a step of initiating operation of a timer with a first response time, the Examiner admits that *Ellis* does not teach this limitation. (Paper No. 9, page 6.) The Examiner looks to *Chao* to supply the missing teaching. *Id.* *Chao* is directed to systems and methods for monitoring the topology of a network, not directed to systems and methods for response time outs in networks. In the invention of *Chao*, management of a point-to-point network by a network management station is effected via a special management application called an "agent" in each node. (*Chao*, column 4, lines 23-25.) The network topology may be ascertained by polling monitoring, however, *Chao* teaches that there is a tradeoff between frequency of polling

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and network bandwidth consumption by management traffic. (*See Chao*, column 6, lines 44-54.) Thus, *Chao* discloses an event approach to maintaining a map of the network topology. (*Chao*, column 6, lines 55-65.) However, should an agent abort without notice, a node may become unreachable without notice to the network manager. (*Chao*, column 6, lines 61-63.) Therefore, *Chao* further teaches an "agent liveliness mechanism." (*Chao*, column 6, lines 63-64; column 9, lines 45-65.) In the agent liveliness query mechanism, the network manager periodically queries the agent liveliness from all manageable nodes. (*Chao*, column 9, lines 45-47.) The interval between agent liveliness queries is determined by the elapsing of the query timer of *Chao*. (*See e.g., Chao*, column 12, lines 37-58.) The teaching in *Chao* directed to a query timer is not disclosed as having any relationship to a time interval associated with a response time in a network. Thus, the Examiner has identified no teaching nor, is there teaching in *Chao*, directed to a step of initiating operation of a timer with a first response time. Hence, the Applicant respectfully contends that neither *Ellis* nor *Chao*, alone or in combination, teach or suggest all of the limitations of claim 7. For this reason, and those discussed hereinabove in conjunction with a motivation to combine references, the Applicant further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 7 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*.

Claims 14 and 16 depend from claim 7. Claims 14 and 16 are directed to the method thereof in which respectively, the first response time is a default value, and in which the first response time is incremented up to a maximum response time value. Additionally, as discussed hereinabove in Subsection 1, a proper motivation for combining *Ellis* and *Chao* upon which a *prima facie* showing of obviousness can be sustained, has not been provided. Moreover, Claims 14 and 16 incorporate all of the limitations of claim 7 and are necessarily allowable under 35 U.S.C. § 103 over *Ellis* and *Chao* as well.

Claim 8 depends from claim 7 and recites the additional limitation in which the first response time is incremented by a timer resolution value. The Examiner relies on disclosure in *Ellis* directed to incrementing a retry number (Paper No. 7, page 3, citing *Ellis* at column 6, line 34.) The

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step of incrementing a retry number cited by the Examiner is included in a methodology described by *Ellis* for calculating a number of retries to be made before a hub manager times the device out. (*Ellis*, column 6, lines 23-45.) Thus, the Examiner has identified no teaching, and there is no such teaching, in *Ellis* directed to incrementing an initial response time value by a timer resolution value. The Examiner responds by asserting that the limitation of claim 8 is disclosed as an "inherent feature of the calculated formula [of *Ellis* at column 6, line 10]. (Paper No. 9, page 6.) However, to rely on inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. MPEP § 2112 (citing *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (B.P.A.I. 1990)). Extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and it would be so recognized by the ordinarily skilled artisan. MPEP § 2112. However, inherency cannot be shown by probabilities or possibilities; the mere fact that a certain thing may result from a given set of circumstances is not sufficient. MPEP § 2112 (citing *In re Robertson*, 49 U.S.P.Q.2d 1949, 1950-51 (Fed. Cir. 1999)). The Applicant respectfully asserts that the Examiner has not met the evidentiary burden necessary to establish the implied inherency upon which the Examiner relies. Although *Ellis* noes not disclose incrementing the first response time, the express teaching of *Ellis* on which the Examiner relies shows that the retry time of *Ellis* does not necessarily have to be incremented by a timer resolution; *Ellis* expressly teaches updating the retry time disclosed therein using a formula that nowhere contains a timer resolution value. (*See Ellis*, column 6, line 10.) Thus, neither *Ellis* alone or in combination with *Chao* teach or suggest all of the limitations of claim 8. For this reason, and those discussed hereinabove in conjunction with a motivation to combine references, the Applicant further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 8 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*.

Claim 9 is directed to the method of claim 7. Claim 7 recites the additional steps of setting a transmit sequence value when the first frame (recited in claim 7) is transmitted, initiating

operation of a response timer when the first information frame is transmitted, comparing the transmit sequence value and a receive sequence value when the first response is received, and idling operation of the response timer when the transmit sequence value corresponds to the receive sequence value. The Examiner contends that *Ellis* discloses all of the steps of claim 9 however, the Examiner admits that *Ellis* does not teach the response timer. (The Applicant therefore understands the Examiner to be admitting also that, necessarily, *Ellis* fails to teach initiating operation of a response timer and idling operation of a response timer.) However, the teachings relied upon by the Examiner in *Ellis* disclose that "[i]n addition to the variables necessary to calculate the retry time and retry value for each network, the first network device may also store other statistics pertaining to the network devices. For example, additional statistics for each network device may include an average response time, a total number of messages sent to the network device, a total number of responses received from the network device ... ." (*Ellis*, column 2, lines 54-64.) Thus, the Examiner has identified no teaching in *Ellis* disclosing steps of setting a transmit sequence value when a first frame of information is transmitted, comparing transmit sequence value and a receive sequence value when a first response is received. The Examiner responds that the "Examiner point[s] out at the initialization of the operation, response time was set, when the first response received the formula was using to figure the correspond sequence value." (Paper No. 9, page 2, citing *Ellis* column 2, lines 55-64.) Although the Applicant is unsure to which formula the Examiner is referring, the teaching in *Ellis* relied upon, by their plain terms, do not refer to any disclosure directed to steps of setting a transmit sequence value when a first frame is transmitted, nor comparing a transmit and a receive sequence value... . The teaching in *Ellis* to which the Examiner refers discloses storing statistics pertaining to the responses of the network devices therein. (*Ellis*, column 2, lines 55-64.)

With respect to the limitations directed to initiating operation of a response timer, and idling operation of the response timer, the Examiner looks to the teachings in *Chao* to supply the limitations admittedly missing in *Ellis*. The Examiner contends that "the skilled artisan would have

look[ed] to the communications system art and would have been led to [utilized] the query timer in *Chao*". (Paper No. 7, page 5.)

As previously discussed, *Chao* is directed to systems and methods for monitoring the topology of a network, not directed to systems and methods for response time outs in networks. In the invention of *Chao*, management of a point-to-point network by a network management station is effected via a special management application called an "agent" in each node. (*Chao*, column 4, lines 23-25.) The network topology may be ascertained by polling monitoring, however, *Chao* teaches that there is a tradeoff between frequency of polling and network bandwidth consumption by management traffic. (*See Chao*, column 6, lines 44-54.) Thus, *Chao* discloses an event approach to maintaining a map of the network topology. (*Chao*, column 6, lines 55-65.) However, should an agent abort without notice, a node may become unreachable without notice to the network manager. (*Chao*, column 6, lines 61-63.) Therefore, *Chao* further teaches an "agent liveliness mechanism." (*Chao*, column 6, lines 63-64; column 9, lines 45-65.) In the agent liveliness query mechanism, the network manager periodically queries the agent liveliness from all manageable nodes. (*Chao*, column 9, lines 45-47.) The interval between agent liveliness queries is determined by the elapsing of the query timer of *Chao*. (*See e.g., Chao*, column 12, lines 37-58.) Thus, the Examiner has identified no teaching nor, is there teaching in *Chao*, directed to a step of initiating operation of a response timer when a first information frame is transmitted, and idling a response timer when the recited transmit sequence value corresponds to the received sequence value. The Examiner has not addressed these showings. In maintaining the rejection of claim 9, the Examiner simply asserts that *Ellis* and *Chao* teach the limitations of claim 9. (Paper No. 9, pages 6-7, citing *Ellis*, column 2, lines 55-64.) For these reasons and those discussed hereinabove in conjunction with the teachings in *Ellis*, the Applicant respectfully contends that it has not been shown that *Ellis* and *Chao*, either alone or in combination, teach or suggest all of the limitations of claim 9. Therefore for this reason, and those previously discussed in conjunction with a motivation to combine references, the Applicant

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further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 9 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*.

Claim 10 depends from claim 9 and recites the additional step of restarting operation of the response timer when the transmit sequence value differs from the receive sequence value. The Examiner simply contends that "*Ellis-Chao*" discloses the limitation of claim 10 (Paper No. 7, page 5.) (The Examiner cites to column 2, lines 19-24, however, the Applicant is unsure as to which of the two references the Examiner is relying upon for the express limitation of claim 10. It is believed that the Examiner is relying on *Ellis* in that the disclosure in *Chao* in the aforementioned location discusses, generally, the objects of the *Chao* invention. In either instance, the teachings of the prior art reference do not address the express limitation of claim 10.) However, the teaching in *Ellis* relied upon simply disclose that "[w]hen the first response time is not a maximum for response times for messages from the first network device to the second network device, the retry time for the second network device is set equal to a weighted average of the current retry time and the first response time." (*Ellis*, column 2, lines 19-24.) Thus, by their plain terms, there is no teaching directed to a step of restarting operation of a response timer when a transmit sequence value differs from a receive sequence value. Thus, it has not been shown that *Chao* and *Ellis*, either alone or in combination, teach or suggest all of the limitations of claim 10. In response, the Examiner "point[s] out the prior art taught [i]n each query, the manager polls the agent start time or anything that is updated each time the agent is restarted." (Paper No. 9, page 3, citing *Chao* column 9, lines 47-49). However, this teaching by its plain terms does not disclose restarting a response timer when a transmit sequence value differs from a receive sequence value. Furthermore, as previously discussed, *Chao* teaches an "agent liveliness mechanism." (*Chao*, column 6, lines 63-64; column 9, lines 45-65.) In the agent liveliness query mechanism, the network manager periodically queries the agent liveliness from all manageable nodes. (*Chao*, column 9, lines 45-47.) The interval between agent liveliness queries is determined by the elapsing of the query timer of *Chao*. (*See e.g.*, *Chao*, column 12, lines 37-58.) Additionally, the teaching relied upon discloses that in each query, the manager polls the agent start

time or anything that is updated time the agent is restarted. (*Chao*, column 9, lines 47-49.) A local time stamp or a counter indicating the number of times the agent is restarted serve the purpose. (*Chao*, column 9, lines 49-52.) Thus, by their explicit terms, the Examiner has not identified disclosure in *Chao* that teaches or suggests the limitation of claim 10.

Additionally, in maintaining the rejection of claim 10, the Examiner simply asserts that the limitations are taught by *Ellis* and *Chao*, and cites to the teaching in *Ellis* discussed above in conjunction with the prior rejection of claim 10. (Paper No. 9, page 7, citing *Ellis*, column 2, lines 19-24.) The Examiner has not addressed the Applicant's showings with respect thereto, which showings are repeated hereinabove. The Examiner is respectfully reminded that where the Examiner repeats a rejection, the Examiner should take note of the Applicant's argument and answer the substance of it. MPEP § 707.07(f). Hence, the Applicant respectfully contends that neither *Ellis* nor *Chao*, alone or in combination, teach or suggest all of the limitations of claim 10. For this reason, and those discussed hereinabove in conjunction with a motivation to combine references, the Applicant further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 7 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*.

Claim 11 depends from claim 7 and recites the additional steps of transmitting the second information frame, selectively receiving a second response in response to transmission of the second information frame, measuring a second amount of time between transmission of the second information frame and receipt of the second response, and selectively initializing a query timer with a maximum response time value. The Examiner contends that all of the limitations of claim 11 are taught by *Ellis* and *Chao* with the exception of the limitations directed to the second information frame. (Paper No. 7, page 6.) However, the Examiner relies on the identical teaching in *Chao* relied upon with respect to claim 9 as disclosing the response timer recited therein. (Paper No. 7, page 6, citing *Chao* at column 12, line 51.) For the same reasons as discussed hereinabove in conjunction with claim 9, the Applicant respectfully contends that the Examiner has not identified teaching in *Chao* directed to the step of initializing a query timer with a maximum response time as recited in

claim 11. Furthermore, the aforementioned step is directed to selectively initializing a query timer and there is nothing in *Chao* that suggests that the query timer is taught therein is selectively initialized. In response, the Examiner "point[s] out the prior art taught the first frame transmit to destination, reach the maximum response time and timeout. The formula calculates the retry time and time-out for the second frame." (Paper No. 9, page 3, citing *Ellis*, FIGURE 4.) However, the teaching relied upon discloses updating a maximum time value and a retry time value, as previously discussed hereinabove. There is no teaching directed to the step of selectively initializing a query timer, or query response, as previously discussed in conjunction with claim 7, from which claim 11 depends. Additionally, in maintaining the rejection of claim 11, the Examiner simply asserts that *Ellis* and *Chao* teach the limitations of claim 11.[1] (Paper No. 9, page 7, citing *Ellis*, FIGURE 4.) Hence, the Applicant respectfully contends that neither *Ellis* nor *Chao*, alone or in combination, teach or suggest all of the limitations of claim 11. For this reason, and those discussed hereinabove in conjunction with a motivation to combine references, the Applicant further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 11 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*.

Claim 12 depends from claim 11 and recites the additional step of selectively modifying the response time value to correspond to a residual time value remaining in a response timer after the second amount of time has passed. The Examiner contends that the express limitation of claim 12 as taught by *Ellis* in disclosing that "the retry time is set to an amount equal to twice the first response time." (Paper No. 7, pages 6-7.) However, by its plain terms, setting a retry time equal to an amount that is twice the first response time does not recite a step of modifying a response time value to correspond to a residual time value remaining in a response timer. In response, "Examiner point[s] out the increment or retry time or the adjustable time based on the calculated formula."

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[1] Claim 11 had previously been rejected over a combination of three references, *Ellis*, *Chao* and U.S. Patent No. 5,592,468 of *Sato*. (Paper No. 7, page 6.) The Examiner now relies only on *Ellis* and *Chao*. The Applicant has addressed the Sato reference in the Applicant's Third Rule 111 Amendment, which showings are hereby incorporated herein by reference to the extent necessary.

(Paper No. 9, page 3, citing *Ellis* column 2, lines 5-65.) Moreover, in maintaining the rejection of claim 12, the Examiner simply asserts that *Ellis* and *Chao* teach the limitations thereof. (Paper No. 9, page 7, citing *Ellis*, column 2, lines 5-65.) However, neither these assertions, nor the express terms of the teaching relied upon disclose selectively modifying the response time value to correspond to a residual time value remaining in a response timer after the second amount of time has passed. Hence, the Applicant respectfully contends that neither *Ellis* nor *Chao*, alone or in combination, teach or suggest all of the limitations of claim 12. For this reason, and those discussed hereinabove in conjunction with a motivation to combine references, the Applicant further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 12 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*.

Claim 13 depends from claim 12 and recites the method thereof in which the response time value is selectively modified to equal the residual time value plus a timer resolution value. The Examiner contends that *Ellis*, *Chao* teach the limitations of claim 13 (Paper No. 9, page 7, citing *Ellis*, citing *Ellis*, column 2, lines 5-65.) The Examiner has previously referred to FIGURE 5 of *Ellis* as disclosing a retry time plus one, which purportedly disclosed the express limitation of claim 13. (Paper No. 7, page 7.) However, the aforesaid teaching in *Ellis* discloses a step of incrementing a retry number, not a step of selectively modifying a response time value. (*Ellis*, FIGURE 5, step 114.) In response, the Examiner "Examiner point[s] out the increment or retry time or the adjustable time based on the calculated formula." (Paper No. 9, page 3, citing *Ellis* column 2, lines 5-65.) Moreover, in maintaining the rejection of claim 12, the Examiner simply asserts that *Ellis* and *Chao* teach the limitations thereof. (Paper No. 9, page 7, citing *Ellis*, column 2, lines 5-65.) However, neither these assertions, nor the express terms of the teaching relied upon disclose a method in which the response time value is selectively modified to equal the residual time value plus a timer

resolution value.[2] Hence, the Applicant respectfully contends that neither *Ellis* nor *Chao*, alone or in combination, teach or suggest all of the limitations of claim 13. For this reason, and those discussed hereinabove in conjunction with a motivation to combine references, the Applicant further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 13 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*. Furthermore, for the reasons recited in conjunction with, *inter alia*, claims 2 and 12, *Ellis* does not show time value increments by a timer resolution value, or a residual time value, respectively. Thus, the Applicant respectfully contends that the prior art references, either alone or in combination, do not teach or suggest all of the limitations of claim 13. For this reason, and those discussed hereinabove in conjunction with a motivation to combine references, the Applicant further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 7 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*.

Claim 15 is directed to the method of claim 14 wherein the default value recited therein corresponds to a maximum amount of time the communication system requires to transfer the first frame of information between a first data processing system and a second data processing system. The Examiner contends that the limitation of claim 15 is taught by *Ellis*. (Paper No. 7, page 7, citing *Ellis* and column 2, line 25.) However, the teaching relied upon does not disclose the limitation of claim 15 but teaches that "when the first response time is a maximum for response times for messages sent from [a] first network device to [a] second network device, the retry time for the second network device is set to an amount equal to twice the first response time." (*Ellis*, column 2, lines 25-28.) Prior art references must be considered in their entirety. MPEP § 2141.02. Thus, in fact, to the extent that *Ellis* discloses modifying a response time value at all, it discloses setting a response time value to twice the maximum response time. In response, the Examiner "point

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[2] As previously discussed in conjunction with, *inter alia*, claim 8, the Examiner has identified no teaching, nor is there a teaching, in the prior art relied upon disclosing a timer resolution. Thus, necessarily, there can be no disclosure of a residual time value plus a timer resolution value.

out when the first response time is a maximum for response times for messages sent from the first network device to the second network device." (Paper No. 9, page 3-4, citing *Ellis* column 2, lines 15-20). This does not disclose a default first response time, (as recited in claim 15 via the dependency from claim 7 through intervening claim 14) that is a maximum amount of time the communication system requires to transfer the first frame of information between a first data processing system and a second data processing system. The teaching of *Ellis* discloses adjusting a retry time (which determines the time interval a message is retried, if no response is received from the recipient system) to a value greater than the first response time when the response time exceeds a maximum for response times for messages sent from the first system to the second system. (*Ellis*, column 2, lines 8-20.) Additionally, in maintaining the rejection of claim 15, the Examiner asserts that *Ellis* and *Chao* teach the limitations of claim 15. (Paper No. 9, page 7 citing *Ellis* column 2, line 25). The teaching referred to has been previously addressed in the Applicant's Third Rule 111 Amendment, and hereinabove. Hence, the Applicant respectfully contends that neither *Ellis* nor *Chao*, alone or in combination, teach or suggest all of the limitations of claim 15. For this reason, and those discussed hereinabove in conjunction with a motivation to combine references, the Applicant further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 15 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*.

Claim 17 recites a first data processing system for communicating with a second data processing system. The first data processing system includes interface means for transmitting a first information frame and for selectively receiving a first response in response to transmission of the first information frame, the timer for measuring a first amount of time between transmission of the first information frame and receipt of the first response, the timer being coupled to the interface means, and a central processing unit coupled to the timer for selectively modifying a response time value in response to the first amount of time. In response to the Applicant's arguments in the Applicant's Third Rule 111 Amendment, that neither *Ellis* or *Chao*, alone or in combination, teach or suggest all of the limitations of claim 17, the Examiner responds that the Examiner "point[s] out

the prior art taught ... a timer for measuring a first amount of time between transmission of the first information frame and receipt of the first response, the timer being coupled to the interface means... ." (Paper No. 9, page 4, citing, *inter alia*, *Chao* column 2 lines 15-column 12 lines 58.) The Applicant has hereinabove discussed, in conjunction with, *inter alia*, claim 9 the teaching in *Chao* upon which the Examiner relies is directed to an agent liveliness mechanism in which the network manager periodically queries the agent liveliness from all manageable nodes. The interval between agent liveliness queries is determined by the elapsing of the query timer of *Chao*. Thus, the Examiner has identified no teaching directed to the timer as recited in claim 17. Hence, the Applicant respectfully contends that neither *Ellis* nor *Chao*, alone or in combination, teach or suggest all of the limitations of claim 17. For this reason, and those discussed hereinabove in conjunction with a motivation to combine references, the Applicant further respectfully asserts that a *prima facie* showing of obviousness has been made with respect thereto, and, hence, claim 77 is allowable under 35 U.S.C. § 103 over *Ellis* and *Chao*.

Claims 18 and 16 depend from claim 17. Claims 18 and 19 each further depend from claim 17. Claim 18 recites the data processing system of claim 17 in which the central processing unit dynamically modifies the response time value in response to the first amount of time, and, claim 19 is directed to the data processing system of claim 17 further including means for incrementing the response time value by a preselected time period in response to the first amount of time. obviousness. As claims 18 and 19 incorporate all of the limitations of the claims from which the depend, and for the reasons discussed hereinabove in conjunction with, claim 17, the prior art references, either alone or in combination, have not been demonstrated to teach or suggest all of the limitations of claims 18 and 19. Additionally, as discussed hereinabove in Subsection 1, a proper motivation for combining *Ellis* and *Chao* upon which a *prima facie* showing of obviousness can be sustained, has not been provided. Moreover, Claims 18 and 19 incorporate all of the limitations of claim 17 and are necessarily allowable under 35 U.S.C. § 103 over *Ellis* and *Chao* as well.

IX.   CONCLUSION FOR THE REASONS NOTED ABOVE

The rejection of claims 1-6 and further the rejection of claims 7-19 are in error. Reversal of the rejections and allowance of the application is respectfully requested.

Respectfully submitted,

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APPENDIX

1.   A method for operating a communication system, comprising the steps of:

transmitting a first information frame;

selectively receiving a first response in response to transmission of the first information frame;

measuring a first amount of time between transmission of the first information frame and receipt of the first response; and

selectively modifying a response time value in response to the first amount of time, wherein said step of measuring a first amount of time between transmission of the first information frame and receipt of the first response uses a timer operating in response to a clock, and wherein said response time value is a response time value of said timer.

2.   The method of claim 1, wherein a step of modifying, further comprises the step of:

incrementing an initial response time value by a timer resolution value, to form the response time value.

3.   The method of claim 2 wherein the initial response time value is incremented up to a maximum response time value.

4.   The method of claim 2 wherein the initial response time value is a default value.

5.   The method of claim 1 wherein the response time approximates an amount of time the communication system requires to transfer the first information frame between a first data processing system and a second data processing system.

6.   The method of claim 1 wherein the response time value is dynamically modifiable in response to the first amount of time.

7.   A method for operating a communication system, comprising the steps of:

transmitting a first frame of information;

initiating operation of a timer with a first response time;

determining when a first query response has been received; and

selectively incrementing the first response time when the first query response has been received.

8.   The method of claim 7 wherein the first response time is incremented by a timer resolution value.

9.   The method of claim 7, further comprising the steps of:

setting a transmit sequence value when the first frame of information is transmitted;

initiating operation of a response timer when the first information frame is transmitted;

comparing the transmit sequence value and a receive sequence value when the first response is received; and

idling operation of the response timer when the transmit sequence value corresponds to the receive sequence value.

10.   The method of claim 9, further comprising the steps of:

restarting operation of the response timer when the transmit sequence value differs from the receive sequence value.

11.   The method of claim 7, further comprising the steps of:

transmitting a second information frame;

selectively receiving a second response in response to transmission of the second information frame;

measuring a second amount of time between transmission of the second information frame and receipt of the second response; and

selectively initializing a query timer with a maximum response time value.

12.   The method of claim 11, further comprising the step of:

selectively modifying the response time value to correspond to a residual time value remaining in a response timer after the second amount of time has passed.

13.   The method of claim 12 wherein the response time value is selectively modified to equal the residual time value plus a timer resolution value.

14.   The method of claim 7 wherein the first response time is a default value.

15.   The method of claim 14 wherein the default value corresponds to a maximum amount of time the communication system requires to transfer the first frame of information between a first data processing system and a second data processing system.

16.   The method of claim 7 wherein the first response time is incremented up to a maximum response time value.

17.   A first data processing system for communicating with a second data processing system, comprising: -

        interface means for transmitting a first information frame and for selectively receiving a first response in response to transmission of the first information frame;

        a timer for measuring a first amount of time between transmission of the first information frame and receipt of the first response, the timer being coupled to the interface means; and

        a central processing unit coupled to the timer for selectively modifying a response time value in response to the first amount of time.

18.   The first data processing system of claim 17 wherein the central processing unit dynamically modifies the response time value in response to the first amount of time.

19.   The first data processing system of claim 17, further comprising:

        means for incrementing the response timer value by a preselected time period in response to the first amount of time.